Summer 2017 Vol. 22 No. 3

LabLink

Director, Bureau of Laboratories
Sandip Shah, PhD, HCLD(ABB)

this issue...

Bureau Vision

The Bureau of Laboratories is a stronger, more diverse team within an integrated public health system. We utilize advanced technology and innovative leadership to provide comprehensive public health services in our dynamic global community.

Bureau Mission

We are dedicated to continuing leadership in providing quality laboratory science for healthier people and communities through partnerships, communication, and technical innovation.

CAP ACCREDITED

MDHHS
Michigan Department of Health & Human Services
RICK SNYDER, GOVERNOR | NICK LYON, DIRECTOR

MDHHS Biosafety and Healthcare Preparedness Conferences

Author: Carrie Anglewicz, Biosafety Officer

The Michigan Department of Health and Human Services Bureau of Laboratories and Bureau of Epidemiology and Population Health will host free one day conferences at multiple locations around the State of Michigan.

Intermediate level instructions for clinical laboratories pertaining to emerging pathogens, identification of select agents, and biosafety risk assessment performance are topics for presentation at these conferences. A table top exercise to learn how to apply safe work practice techniques will be included in the instructional presentation.

Participant objectives are:

- Discuss the challenges of identifying and testing emerging infectious pathogens
- Explain the proper use of automated instrumentation when identifying unknown organisms
- Identify the components of a biosafety risk assessment and best practices for mitigation of safety risks in the laboratory
- Perform a biosafety risk assessment based on a scenario in a table top exercise

Please register for these conferences and use course ID# 1071547 at https://mi.train.org. Limited seating is available.

Four P.A.C.E.® contact hours will be awarded to attendees. A continental breakfast and lunch will be provided. Contact Carrie Anglewicz with questions: Call 517-335-9654 or email anglewiczc@michigan.gov

Please refer to the tables below for dates, locations, and agenda information.

Date	Location
August 16	Gaylord
September 19	Grand Rapids
September 21	Lansing
September 26	Kalamazoo
October 3	Bay City
October 11	Plymouth

Plymouth Location Only

Guest Speaker: Sean Kaufman, CEO,

Behavioral Based Improvement Solutions

http://www.seankaufman.com/

Time	Topic
8:00—8:30	Registration and Breakfast
8:30—9:00	Welcome
9:00—9:30	Regional Epidemiologist Update
9:30—10:30	Emerging Pathogens/Special Pathogens Response Network
10:30—11:00	Break
11:00—12:00	Identifying Select Agents/Healthcare Epidemiology/ Statistics
12:00—1:00	Lunch
1:00—2:00	Laboratory Biosafety Risk Assessments/Surveillance and Outbreak Investigation
2:00—2:15	Break
2:15—3:30	Biosafety Table Top Exercise
3:30—4:00	Closing/Evaluations

MDHHS BOL Offers Free Packaging and Shipping Classes

Author: Shannon Sharp, MT(ASCP), Bioterrorism Training Coordinator

The Packaging and Shipping course will provide a comprehensive overview of Federal (DOT & USPS) and International (IATA) regulations applicable to packaging and shipping of laboratory specimens. This intermediate level course offers an understanding of the terminology, packaging, marking, labeling, and documentation requirements by integration of lecture, demonstrations, group exercises, and handouts. Successful completion of this course meets requirements for employer certification.

This class is designed to meet the needs of those previously certified as well as those who have never completed certification.

The first two hours will be a combined training for those who have never been previously certified and a refresher course for those renewing their certification. Participants who have never been certified will stay for an additional two hours of training for in-depth discussion, hands-on exercises, and a question and answer period.

If you are interested in attending any of the sessions listed in the adjacent table, please register at the MI-TRAIN website: **https://mi.train.org**

The course name is ***Packaging and Shipping of Clinical Samples.***

The course identification number is ***1062236.***

Facility Name	Address	Date	Time
Upper Peninsula Health System Laboratory- Marquette Room: Conference Room 3	420 W Magnetic St Marquette, MI 49855	8/10/2017	9am-1pm (Recertification only 9am-11am)
Portage Health System Laboratory Room: Conference Center	500 Campus Drive Hancock, MI 49930	8/11/2017	9am-1pm (Recertification only 9am-11am)
Helen Newberry Joy Hospital Room: Huron Conference Room	502 West Harrie St Newberry, MI 49868	8/14/2017	9am-1pm (Recertification only 9am-11am)
McLaren Northern Michigan Hospital Room: Clinical Ed. Classroom	416 Connable Ave Petoskey, MI 49770	8/15/2017	12pm-4pm (Recertification only 12pm-2pm)

For questions contact Shannon Sharp at 517-335-9653 or **sharps1@michigan.gov**

But MALDI-TOF Called It…..

Author: Robert Jacobson, B.S., M(ASCP), Microbiologist

An isolate from a blood culture on a newborn baby boy was submitted to MDHHS on a chocolate slant. A serotyping of *Haemophilus influenzae* was requested. Gram stain showed a short to medium length slender Gram negative bacilli with long forms. The isolate grew on chocolate, but not blood or MacConkey agar plates. It was catalase positive and weakly oxidase positive. Colony morphology was consistent with *H. influenzae*.

MALDI-TOF was performed and all ten score values were greater than 2.00 with an identification of *H. haemolitycus.* It was reported as such and the submitter subsequently questioned our result. 16S rRNA sequencing was completed and *H. haemolitycus* and *H. influenzae* were the top two choices, but confidence values were only in the presumptive range utilizing the library used at MDHHS. The sequence was then matched against the NCBI BLAST sequencing tool. That result indicated '*Haemophilus quentini'* for this sequence. MDHHS submitted the isolate to the Centers for Disease Control and Prevention and it was confirmed as *'Haemophilus quentini'* by 16S rRNA sequencing and phenotypic methods.

Literature search indicated that this organism is primarily isolated from neonatal and genital tract infections. It had previously been considered as a non-typable capsule type *H. influenzae* biotype IV.

16S rRNA sequencing revealed it was more closely related to *H. haemolitycus.* These strains were termed *H. influenzae* cryptic genospecies. The proposed renaming of this group is '*H. quentini';* it has not been validly published in the International Journal of Systemic and Evolutionary Microbiology at this time. Distinguishing between *H. influenzae and 'H. quentini'* cannot be done with current automated methods and biochemical tests that are routinely available in clinical microbiology laboratories.

'Haemophilus quentini' is described as an opportunistic pathogen of the genito-urinary tract that can be acquired sexually. It has also been responsible for neonatal meningitis, septic abortions, bartholinitis, and endometritis. It may be the cause of unresolved urinary tract disease in men. If suspected, a non-selective chocolate agar plate would be needed for recovery.

Reference:

Glover W.A., Suarez C.J., Claridge J.E. (2011) *Genotypic and phenotypic characterization and clinical significance of 'Haemophilus quentini' isolated from the urinary tract of adult men*. Journal of Medical Microbiology, 60, 1689-1692.

Cutting-edge Technology for New Disorders in the Newborn Screening Laboratory

Author: Harry Hawkins, Newborn Screening Section Manager

Newborn Screening (NBS) is a public health program to test babies for over 50 rare but treatable disorders that are not always evident at birth. Laboratory testing is performed on filter paper heel stick blood spots collected at 24 hours of age. The newest additions to the screening panel will be Glycogen Storage Disease Type II (Pompe) and Mucopolysaccharidosis Type I (MPS I).

Pompe and MPS I are two of approximately 50 metabolic disorders that result in lysosomal dysfunction. Lysosomal storage diseases (LSDs) are genetic disorders in which a mutation affects the activity of one or more enzymes. The normal metabolism of specific macromolecules is blocked and the macromolecules accumulate inside the lysosomes, causing severe physiological damage or deformity. Variability in enzyme activity leads to a broad spectrum of illnesses.

Pompe is an autosomal recessive disorder that leads to a deficiency of acid α-D-glucosidase (GAA). The most severe infantile form can progress from hypotonia and cardiomyopathy to death in the first year of life.

MPS I, also an autosomal recessive disorder, is one of seven sub-types caused by a defect in the coding of α-L-iduronidase (IDUA) that leads to an accumulation of glycosaminoglycoans (GAGS) in the lysosomes. These accumulations can affect many different organs and tissues. Severe MPS I can cause a rapid intellectual decline and development delay by age one.

The NBS laboratory is preparing to screen for Pompe and MPS I on a platform that is relatively new to newborn screening. Digital microfluidics on the Baebies Seeker™ is a “lab on a chip” concept. This is the first FDA approved platform for lysosomal storage disorders for NBS. A single cartridge handles all of the steps of the analysis from sample preparation, processing, mixing, incubation, detection, and waste handling on the chip. The 3.5 µL dried blood spot eluate sample is pipetted onto the cartridge. A 200 nL droplet from each sample is sandwiched between two parallel plates filled with an immiscible oil. The top plate physically contains the droplet and the bottom plate contains programmable electrodes that can guide the droplets along the desired channel. The modulation of the interfacial tension between the droplet and the hydrophobic surface on the bottom plate can move the droplet. Software directed changes in the voltage advance the droplets through the various stages of the assay. The cartridges contain 48 wells for specimens, calibrators, and quality control samples. A workstation with four cartridges can test 480 samples per day.

Very few laboratories screen for LSDs using digital microfluidics. Michigan plans to report LSDs, Pompe and MPS I, this fall.

Corrected Version

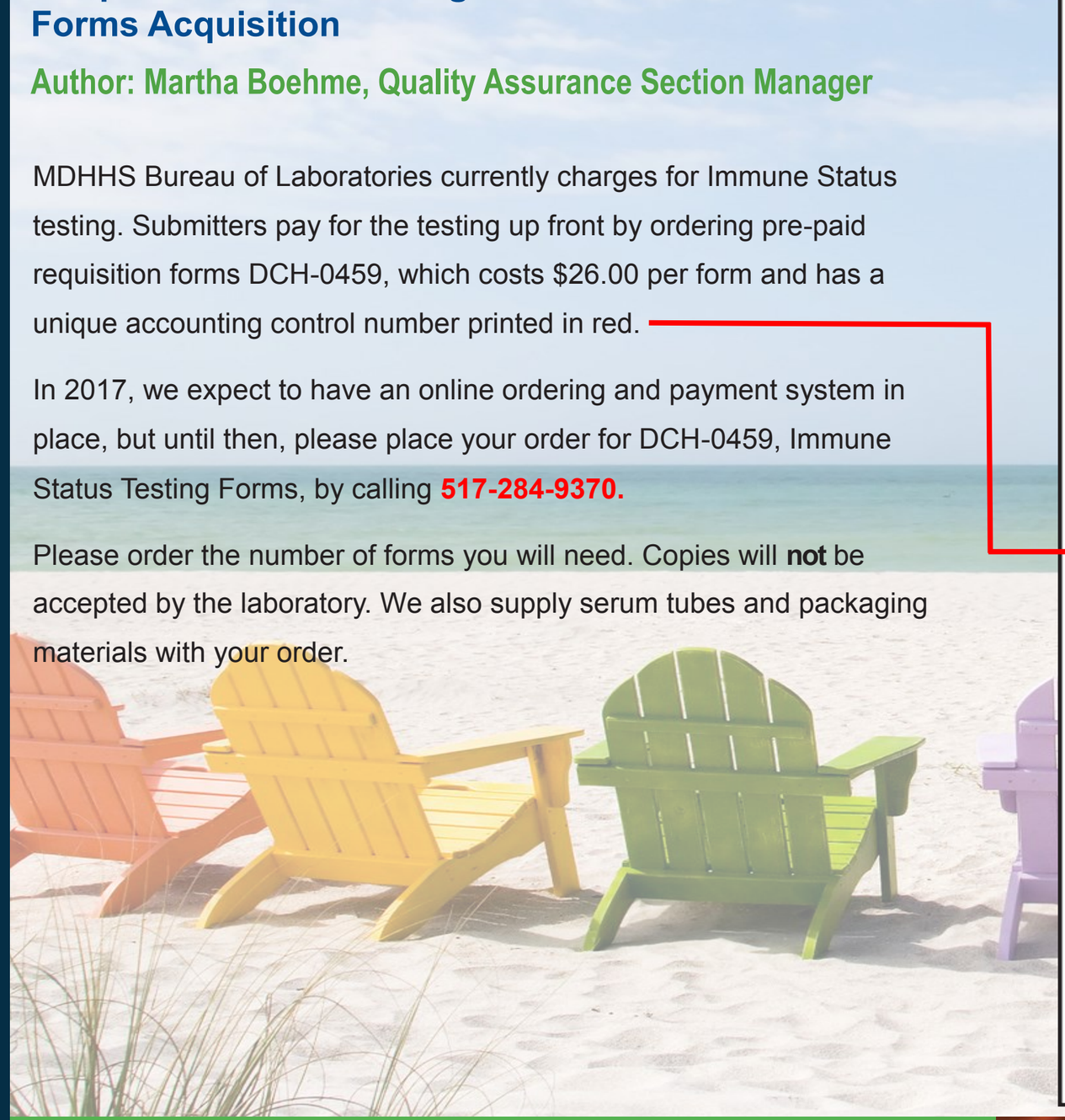
Telephone Number Change for Immune Status Test Forms Acquisition

Author: Martha Boehme, Quality Assurance Section Manager

MDHHS Bureau of Laboratories currently charges for Immune Status testing. Submitters pay for the testing up front by ordering pre-paid requisition forms DCH-0459, which costs $26.00 per form and has a unique accounting control number printed in red.

In 2017, we expect to have an online ordering and payment system in place, but until then, please place your order for DCH-0459, Immune Status Testing Forms, by calling **517-284-9370.**

Please order the number of forms you will need. Copies will **not** be accepted by the laboratory. We also supply serum tubes and packaging materials with your order.



MEDICAL/NURSING STUDENT ANTIBODY TESTING

Michigan Department of Health and Human Services
Bureau of Laboratories
3350 N. Martin Luther King Jr. Blvd.
P.O. Box 30035
Lansing, Michigan 48909
HTTP://www.michigan.gov/mdhhslab
Phone (517) 335 – 8059 - Laboratory Records Fax (517) 335 – 9871 Technical Information (517) 335 - 8067

Date Received at MDHHS	MDHHS Sample #
Return Results To:	ENTER STARLIMS CODE IF KNOWN Phone (24/7) FAX
REFERRING PHYSICIAN/ PROVIDER NAME	
SUBMITTER'S SPECIMEN NUMBER (If Applicable)	REQUIRED SPECIMEN SOURCE IS SERUM
CHECK TESTS REQUESTED ☐ All ☐ Measles ☐ Mumps ☐ Rubella ☐ Anti-HBsAg ☐ Varicella Zoster	☐ ACCOUNTING CONTROL NUMBER 2701
DATE OF COLLECTION	M M D D Y Y Y Y
PATIENT'S NAME (Last, First, M.I.)	
SUBMITTER'S PATIENT NUMBER	
PATIENT'S CITY OF RESIDENCE	
GENDER ☐ FEMALE ☐ MALE	PREGNANT? (IF STATUS IS KNOWN) ☐ YES ☐ NO
DATE OF BIRTH	M M D D Y Y Y Y

DCH-0459 August 1, 2016 By Authority of Act 368, P.A. 1978

This form may not be reproduced.
Please call 517-284-9370 to order this form.

MDHHS Offers Chemical Threat Response Training to Local Health Departments

Author: Teresa Miller, Chemical Threat Response Training Coordinator

What would you do if community members arrived at your local health department with chemical exposure symptomology? Are you prepared for response? Do you know how to initiate and maintain a chain of custody for possible evidentiary samples? Do you know the proper procedure for collection, packaging, and shipment of clinical samples?

The Michigan Department of Health and Human Services Bureau of Laboratories (MDHHS BOL) Outreach Program offers training for public health entities, hospitals, and other emergency preparedness partners on Chemical Threat Response. This program is suitable for emergency preparedness coordinators or any other personnel that may be responsible to collect, label, package, and ship blood and urine specimens from persons that have been exposed, accidently or intentionally, to chemical agents.

This presentation is approximately one hour long. Contact hours are awarded for successful completion of the program which includes attendance, 80% pass rate on the post-test and completion of a program evaluation.

MDHHS BOL offers this training program free of charge as a Laboratory Response Network-Chemical (LRN-C) Level 1 laboratory funded through a Public Health Emergency Preparedness (PHEP) cooperative agreement with the Centers for Disease Control and Prevention.

Use the contact information below to schedule training for your facility.

Email: millert28@michigan.gov
Phone: 517-241-0925

LabLink is published quarterly by the Michigan Department of Health and Human Services, Bureau of Laboratories, to provide laboratory information to Michigan health professionals and the public health community.

MDHHS is an Equal Opportunity Employer, Services and Programs Provider.

Editor: Teresa Miller